Biological Data Variables by Type

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Each ancillary variable corresponds to one or more rows in the BADM template. When there are multiple rows, one of the rows is chosen as the variable name. The remaining template rows are folded into parameters, measurement time, and comments associated with that variable. For example, entries from SPP_O<n>, SPP_DATE, and SPP_COMMENT are folded into the surviving variable SPP_O_PERC. Similarly, SOIL_C_PROFILE_MIN, SOIL_C_PROFILE_MAX, SOIL_C_PROFILE_HORIZON, SOIL_C_DATE, SOIL_C_COMMENT are folded into SOIL_C.

	Variable Name	Units	Explanation	Reporting protocols
Chemistry of Soil, Forest Floor, and Live Foliage				
	LMA<n>	gC/m2 (leaf)	Leaf mass per unit leaf area. Report each significant (overstory or understory) species separately. In forests, LMA should represent the canopy mean for a given species.	Reported one or more times during the year; by species; with sample depth
	FOL_N<n>	gN/100g foliar mass	Foliage nitrogen concentration. Report each significant (overstory or understory) species separately. In forests, FOL_N should represent the canopy mean for a given species.	Reported one or more times during the year; by species; with sample depth
	FOL_C<n>	gC/100g foliar mass	Foliage carbon concentration. Report each significant (overstory or understory) species separately. In forests, FOL_C should represent the canopy mean for a given species.	Reported one or more times during the year; by species; with sample depth
	WOOD_N<n>	gN/100g dry weight	Woody tissue nitrogen concentration. Report each significant (overstory or understory) species separately. In forests, WOOD_N should represent the canopy mean for a given species.	Reported one or more times during the year; by species; with sample depth
	WOOD_C<n>	gC/100g dry weight	Woody tissue carbon concentration. Report each significant (overstory or understory) species separately. In forests, WOOD_C should represent the canopy mean for a given species.	Reported one or more times during the year; by species; with sample depth
	LIT_N	gN/100g litter	Litter nitrogen concentration.	Annual value
	LIT_C	gC/100g litter	Litter carbon concentration.	Annual value
	ROOT_N<n>	gN/100g	Root nitrogen concentration. If measured multiple times during the year, the ROOT_N and ROOT_N_DATE for each measurement are reported.	Reported one or more times during the year

	Variable Name	Units	Explanation	Reporting protocols
	ROOT_C<n>	gC/100g	Root carbon concentration. If measured multiple times during the year, the ROOT_C and ROOT_C_DATE for each measurement are reported.	Reported one or more times during the year
	SOIL_BD	g/cm3	Soil bulk density. Percent by mass.	Annual value; over sample profile
	SOIL_C	kgC/m2	Soil organic carbon. Percent by mass. Preferably measured at 0-0.1m, 0.1-0.2m, 0.2-0.5m, 0.5-1.0m.	Annual value; over sample profile
	SOIL_N	kg/m2	Soil nitrogen content. Preferably measured at 0-0.1m, 0.1-0.2m, 0.2-0.5m, 0.5-1.0m.	Annual value; over sample profile
	SOIL_PH	kg/m2	Soil PH. Total soil PH as CaCl2. Preferably measured at 0-0.1m, 0.1-0.2m, 0.2-0.5m, 0.5-1.0m.	Annual value; over sample profile
	SAND_PERC	%	Sand content. Percent by mass.	Annual value; over sample profile
	SILT_PERC	%	Silt content. Percent by mass.	Annual value; over sample profile
	CLAY_PERC	%	Clay content. Percent by mass.	Annual value; over sample profile
	ROCK_PERC	%	Rock content. Percent by mass.	Annual value; over sample profile
	SOIL_DEPTH	m	Soil depth. Depth to bedrock; limit to root penetration.	Annual value
	SOIL_WATER_CAP	%	Soil water holding capacity. Percent by mass.	Annual value
Phenology				
	BUDBK<n>_DATE	DOY/YYYY	Budbreak date. Date budbreak or first opening of leaves was observed. For each significant species (SPP_O or SPP_U) present in the reporting area, the BUDBK_DATE and BUDBK_SPP are reported. For crops or grasses, use COT_DATE rather than BUDBK_DATE.	Reported one or more times during the year; with sample depth
	COT<n>_DATE	DOY/YYYY	Cotyledons date. Date first cotyledons present. For each significant species (SPP_O or SPP_U) present in the reporting area, the COT_DATE and COT_SPP are reported.	Reported one or more times during the year; with sample depth
	FLOWER<n>_DATE	DOY/YYYY	Flowering date. Date on which the first flowers have opened completely in at least three places on individual plants. For each significant species (SPP_O or SPP_U) present in the reporting area, the FLOWER_DATE and FLOWER_SPP are reported.	Reported one or more times during the year; with sample depth
	LEAFFULL<n>_DATE	DOY/YYYY	Maximum leaf expansion date. Date of maximum leaf expansion. For each significant species (SPP_O or SPP_U) present in the reporting area, the LEAFFUL_DATE and LEAFFUL_SPP are reported.	Reported one or more times during the year; with sample depth

	Variable Name	Units	Explanation	Reporting protocols
	LEAFSEN<n>_DATE	DOY/YYYY	Date of leaf senescence. Date when approximately 50% of the leaves of individual plants observed, including leaves that have fallen to the ground, have taken on the colors of autumn. For each significant species (SPP_O or SPP_U) present in the reporting area, the LEAFSEN_DATE and LEAFSEN_SPP are reported.	Reported one or more times during the year; with sample depth
	LEAFOFF<n>_DATE	DOY/YYYY	Date of total leaf-off. Date at which in conifers and some deciduous trees, most brown needles/leaves have fallen. For each significant species (SPP_O or SPP_U) present in the reporting area, the LEAFOFF_DATE and LEAFOFF_SPP are reported.	Reported one or more times during the year; with sample depth
Plot Condition				
	LAND_OWN		Land ownership type. Land ownership code.	Reported once and then only if changed
			- private: Land ownership: private	
			- public: Land ownership: public	
	LAND_OWNER		Land owner. If public, name agency (Forest Service, Bureau of Land Management, etc.). If private, name owner if available.	Reported once and then only if changed
	SITE_DESC		Site description. General information about the site. Use SITE_DESC_HISTORY and/or SITE_DESC_FETCH to report the site history and/or fetch.	Reported once and then only if changed
	ASA	years	Average stand age. Years.	Annual value
	MSA	years	Maximum stand age. Calculated as the mean age of the oldest 10% of trees.	Annual value
	DIST<n>		Site disturbance history code. Each disturbance code may have up to 3 code-specific qualifiers indicating attributes such as type, depth, percent, or application method.	Reported at each event
			- crop residue management: Qualifier indicates the % left on field.	
			- fertilized: Applies to grassland or cropland sites. Qualifiers indicate the amount (Kg ha-1), type, and application method of fertlizer. Fertilizer types include N, P, K, or other. Application methods include broadcast, coulter injection knife, sprayer, or other.	
			- fire: Fires other than wildfire. Qualifier indicates the severity. Fire severity includes high, medium, or low.	
			- FWD removal: Applies to forest sites. Fallen wood removal other than by underburning.	
			- general: Descriptive text, used only when one of the other DIST codes does not apply.	

	Variable Name	Units	Explanation	Reporting protocols
			- grazed: Applies to grassland, cropland, or savannah sites. If the site is not grazed in a year, please report that using the ungrazed code.	
			- harvest: Crop harvest activity or forest clearcutting. Qualifier indicates if left on the field. Qualifier must be either residue left on field or residue removed.	
			- insects and pathogens: Change in vegetative cover due to insects and pathogens.	
			- irrigated: Applies to grassland or cropland sites.	
			- natural regeneration filled: Natural regeneration supplemented with planted trees or other vegetation.	
			- natural regeneration: Regeneration unsupplemented with plantings.	
			- pesticide: Application of insectide or pesticide. Qualifiers indicates the amount (Kg ha-1) and type of pesticide.	
			- planted: Applies to grassland, cropland, or savannah sites. Sowing or planting. Please use the SPP_U<n> variable to report what was planted for each planting date.	
			- storm: Severe storm such as hurricane.	
			- thinning: Applies to forest sites. Clearcutting reported by the harvest code. Qualifier indicates the % of thinning.	
			- tillage: Applies to grassland or cropland sites. Any tillage including scarification and plowing. Qualifiers indicate the depth (m) and type of tillage. Tillage types include conventional, scarification, strip-till, ridge-till, or other	
			- underburn: Applies to forest sites. Please report fallen removal by other means with the FWD removal code.	
			- ungrazed: Applies to grassland, cropland, or savannah sites.	
			- wildfire: Please report non-wildfires with the fire code. Qualifier indicates the severity. Fire severity includes high, medium, or low.	
			- windthrow: Qualifier indicates the % left on field.	
			- woody encroachment: Applies to grassland, cropland, or savannah sites.	
Productivity				
	WOOD_INCR<n>	mm	Wood radial increment. Provide multiple years (past 20-30 yrs), not an average of years. Each WOOD_INCR is reported with the year of the WOOD_INCR.	Annual value

	Variable Name	Units	Explanation	Reporting protocols
	AG_PROD_TF	gC/m2 (ground) /y	Aboveground production of tree foliage. Includes overstory foliage only. Grassland, crops, tundra sites do not report this variable.	Annual value
	AG_PROD_TW	gC/m2 (ground) /y	Aboveground production of tree wood. Includes overstory stems and branches. Grassland, crops, tundra sites do not report this variable.	Annual value
	AG_PROD_TT	gC/m2 (ground) /y	Aboveground production of tree total. Includes overstory foliage, stems, and branches. Grassland, crops, tundra sites do not report this variable. Sites should report AG_PROD_TT only if AG_PROD_TF and AG_PROD_TW cannot be separated.	Annual value
	AG_PROD_SF	gC/m2 (ground) /y	Aboveground production of shrub foliage. Includes foliage only.	Annual value
	AG_PROD_SW	gC/m2 (ground) /y	Annual aboveground production of shrub wood. Includes stems and branches.	Annual value
	AG_PROD_ST	gC/m2 (ground) /y	Aboveground production of shrub total. Includes shrub foliage, stems, and branches. Sites should report AG_PROD_ST only if AG_PROD_SF and AG_PROD_SW cannot be separated.	Annual value
	AG_PROD_NWT	gC/m2 (ground) /y	Aboveground production of non-woody plants. Dry weight of plants including plants and forbs. Grass sites report the total above ground biomass. Forest sites report any non-woody plants.	Annual value
	AG_PROD_CF	gC/m2 (ground) /y	Aboveground production of crops foliage. Includes live foliage only.	Annual value
	AG_PROD_CH	gC/m2 (ground) /y	Aboveground production of crops harvest. Includes agricultural crops harvest materials such as fruit.	Annual value
	AG_PROD_CT	gC/m2 (ground) /y	Annual aboveground production of crops total. Includes foliage and harvest materials. Sites should report AG_PROD_CT only if AG_PROD_CF and AG_PROD_CH cannot be separated.	Annual value
	CR_PROD	gC/m2 (ground) /y	Coarse root production. Includes coarse root production only.	Annual value
	FR_PROD	gC/m2 (ground) /y	Fine root production. Includes fine root production only.	Annual value
	RT_PROD	gC/m2 (ground) /y	Total root production. Includes coarse and fine root mass. Sites should report RT_PROD only if CR_PROD and FR_PROD cannot be separated.	Annual value
	NEP	gC/m2 (ground) /y	Net ecosystem production. Computed from biological measurements. NEP can be computed as a mean over NEP_DUR years with NEP_YEAR as the central year. For example, if NEP is averaged over 1995-2000, NEP_DUR = 5 and NEP_YEAR = 1998.	Annual value
	LIT_PROD	gC/m2 (ground) /y	Litterfall. Leaf litter and twigs < 1cm diameter. Sampled periodically through the year, dried and weighed and summed over year.	Annual value

	Variable Name	Units	Explanation	Reporting protocols
Soil Respiration				
	SWC<n>	m3/m3	Soil water content. Manual measurement based on time-domain measurement methods sensitive to dielectric permittivity over a depth profile. The profile should have several entries.	Reported one or more times during the year
	Rs<n>_MEAN	umol/m2 (ground) /s	Site-specific mean soil CO2 efflux. Plot/site level means should be reported hourly. A value of Ts should be reported for each.	Reported one or more times during the year
	Ts<n>	deg C	Soil temperature. Site-specific mean soil temperature as measured next to the soil respiration collars preferably at 8 cm depth. A value of Rs should be reported for each.	Reported one or more times during the year
Vegetation Condition				
	IGBP		Vegetation type. IGBP classification.	Reported once and then only if changed
			- CRO: Croplands: Lands covered with temporary crops followed by harvest and a bare soil period (e.g., single and multiple cropping systems). Note that perennial woody crops will be classified as the appropriate forest or shrub land cover type.	
			- CSH: Closed Shrublands: Lands with woody vegetation less than 2 meters tall and with shrub canopy cover >60%. The shrub foliage can be either evergreen or deciduous.	
			- CVM: Cropland/Natural Vegetation Mosaics: Lands with a mosaic of croplands, forest, shrublands, and grasslands in which no one component comprises more than 60% of the landscape	
			- DBF: Deciduous Broadleaf Forests: Lands dominated by woody vegetation with a percent cover >60% and height exceeding 2 meters. Consists of broadleaf tree communities with an annual cycle of leaf-on and leaf-off periods.	
			- DNF: Deciduous Needleleaf Forests: Lands dominated by woody vegetation with a percent cover >60% and height exceeding 2 meters. Consists of seasonal needleleaf tree communities with an annual cycle of leaf-on and leaf-off periods.	
			- EBF: Evergreen Broadleaf Forests: Lands dominated by woody vegetation with a percent cover >60% and height exceeding 2 meters. Almost all trees and shrubs remain green year round. Canopy is never without green foliage.	
			- ENF: Evergreen Needleleaf Forests: Lands dominated by woody vegetation with a percent cover >60% and height exceeding 2 meters. Almost all trees remain green all year. Canopy is never without green foliage.	

	Variable Name	Units	Explanation	Reporting protocols
			- GRA: Grasslands: Lands with herbaceous types of cover. Tree and shrub cover is less than 10%. Permanent wetlands lands with a permanent mixture of water and herbaceous or woody vegetation. The vegetation can be present in either salt, brackish, or fresh water.	
			- MF: Mixed Forests: Lands dominated by trees with a percent cover >60% and height exceeding 2 meters. Consists of tree communities with interspersed mixtures or mosaics of the other four forest types. None of the forest types exceeds 60% of landscape.	
			- OSH: Open Shrublands: Lands with woody vegetation less than 2 meters tall and with shrub canopy cover between 10-60%. The shrub foliage can be either evergreen or deciduous.	
			- SAV: Savannas: Lands with herbaceous and other understory systems, and with forest canopy cover between 10-30%. The forest cover height exceeds 2 meters.	
			- UNC: Unclassified	
			- URB: Urban and Built-Up Lands: Land covered by buildings and other man-made structures.	
			- WAT: Water Bodies: Oceans, seas, lakes, reservoirs, and rivers. They can be either fresh or salt water bodies.	
			- WET: Permanent Wetlands: Lands with a permanent mixture of water and herbaceous or woody vegetation that cover extensive areas. The vegetation can be present in either salt, brackish, or fresh water	
			- WSA: Woody Savannas: Lands with herbaceous and other understory systems, and with forest canopy cover between 30-60%. The forest cover height exceeds 2 meters.	
	SPP_O<n>_PERC	%	Overstory dominant species percent. Percent of overstory (tree stems) that SPP_O<n> represents. The reported SPP_O<n>_PERC values should sum to no more than 100% and at least 50%.	Annual value; by species; with sample depth
	SPP_U<n>_PERC	%	Understory dominant species percent. Percent of understory that SPP_U<n> represents. The reported SPP_U<n>_PERC values should sum to no more than 100% and at least 50%.	Annual value; by species; with sample depth

	Variable Name	Units	Explanation	Reporting protocols
	LAI_DO<n>	m2/m2	Deciduous overstory Leaf Area Index. Averaged over the tower footprint. Calculated as m2 half-surface area leaf per m2 ground. Report deciduous green leaf LAI and not total leaf LAI. If measured multiple times during the year, the associated LAI_DATE, LAI_CLUMP, LAI_TECHNIQUE, and LAI_COMMENT for each measurement are reported.	Reported one or more times during the year; over sample profile
	LAI_EO<n>	m2/m2	Evergreen overstory Leaf Area Index. Averaged over the tower footprint. Calculated as m2 half-surface area leaf per m2 ground. Report evergreen leaf LAI and not total leaf LAI. If measured multiple times during the year, the associated LAI_DATE, LAI_CLUMP, LAI_TECHNIQUE, and LAI_COMMENT for each measurement are reported.	Reported one or more times during the year; over sample profile
	LAI_U<n>	m2/m2	Understory Leaf Area Index. Averaged over the tower footprint. Calculated as m2 half-surface area leaf per m2 ground. Report understory green leaf LAI and not total leaf LAI. If measured multiple times during the year, the associated LAI_DATE, LAI_CLUMP, LAI_TECHNIQUE, and LAI_COMMENT for each measurement are reported.	Reported one or more times during the year; over sample profile
	LAI<n>	m2/m2	Leaf Area Index. Averaged over the tower footprint. Calculated as m2 half-surface area leaf per m2 ground. Report green leaf LAI and not total leaf LAI. If measured multiple times during the year, the LAI, LAI_CLUMP, and LAI_TECHNIQUE should be reported for each date.	Reported one or more times during the year; over sample profile
	HEIGHTC	m	Canopy height.	Annual value
	AG_BIOMASS_TF	gC/m2 (ground) /y	Aboveground biomass of tree foliage. Dry weight of live foliage. Grassland, crops, and tundra sites do not report this variable.	Annual value
	AG_BIOMASS_TW	gC/m2 (ground) /y	Aboveground biomass of tree wood. Dry weight of live stems and branches. Grassland, crops, and tundra sites do not report this variable.	Annual value
	AG_BIOMASS_TT	gC/m2 (ground) /y	Aboveground biomass trees total. Dry weight live foliage, stems, and branches. Grassland, crops, and tundra sites do not report this variable. Sites should report AG_BIOMASS_TT only if AG_BIOMASS_TF and AG_BIOMASS_TW cannot be separated.	Annual value
	AG_BIOMASS_SF	gC/m2 (ground) /y	Aboveground biomass of shrub foliage. Dry weight of live foliage.	Annual value
	AG_BIOMASS_SW	gC/m2 (ground) /y	Aboveground biomass of shrub wood. Dry weight of stems and branches.	Annual value

	Variable Name	Units	Explanation	Reporting protocols
	AG_BIOMASS_ST	gC/m2 (ground) /y	Aboveground biomass of shrubs total. Dry weight of foliage, stems, and branches. Sites should report AG_BIOMASS_ST only if AG_BIOMASS_SF and AG_BIOMASS_SW cannot be separated.	Annual value
	AG_BIOMASS_NWT	gC/m2 (ground) /y	Aboveground biomass of non-woody plants. Dry weight of plants including plants and forbs. Grassland sites report the total above ground biomass. Forest sites report any non-woody plants.	Annual value
	AG_BIOMASS_CF<n>	gC/m2 (ground)	Aboveground biomass of crops foliage. Dry weight of foliage. If measured multiple times during the year, the AG_BIOMASS CF and AG_BIOMASS_CH should be reported for each date.	Reported one or more times during the year
	AG_BIOMASS_CH<n>	gC/m2 (ground)	Aboveground biomass of crops harvest. Dry weight of harvest materials such as fruit. If measured multiple times during the year, the AG_BIOMASS CF and AG_BIOMASS_CH should be reported for each date.	Reported one or more times during the year
	AG_BIOMASS_CT<n>	gC/m2 (ground)	Aboveground biomass of crops total. Includes live foliage and harvest materials. Sites should report AG_BIOMASS_CT only if AG_BIOMASS_CF and AG_BIOMASS_CH cannot be separated.	Reported one or more times during the year
	LIT_MASS<n>	gC/m2 (ground)	Litter mass. Dry weight including litter and twigs < 1 cm diameter.	Reported one or more times during the year
	CROP_RESID	gC/m2 (ground) /y	Crop residue. Dead mass dry weight.	Annual value
	CWD	gC/m2 (ground)	Coarse woody debris. Includes debris with diameter > 10 cm.	Annual value
	FWD	gC/m2 (ground)	Fine woody debris. Includes debris with diameter 1 cm – 10 cm.	Annual value
	ST_MASS	gC/m2 (ground)	Stump mass. Dry weight; estimated from mean stump diameter and species-specific allometric equations.	Annual value
	SNAG	gC/m2 (ground)	Mass of standing dead trees. Dry weight.	Annual value
	CR_BIOMASS	gC/m2 (ground) /y	Coarse root biomass (live). Calculated from allometric equations.	Annual value
	FR_BIOMASS	gC/m2 (ground) /y	Fine root biomass (live). Sampled at 0-0.1m, 0.1 -0.2m, 0.2-0.5m, 0.5-1.0 meter depth and aggregated.	Annual value
	RT_BIOMASS	gC/m2 (ground) /y	Total root biomass. Includes coarse and fine root mass. Sites should report RT_BIOMASS only if CR_BIOMASS and FR_BIOMASS cannot be separated.	Annual value

	Variable Name	Units	Explanation	Reporting protocols
Measurement Metadata				
	AG_PROD_TF_METHOD		Aboveground production of tree foliage measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_PROD_TW_METHOD		Aboveground production of tree wood measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_PROD_TT_METHOD		Aboveground production of tree total measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_PROD_SF_METHOD		Aboveground production of shrub foliage measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_PROD_SW_METHOD		Aboveground production of shrub wood measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_PROD_ST_METHOD		Aboveground production of shrub total measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_PROD_NWT_METHOD		Aboveground production of non-woody (total) measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_PROD_CF_METHOD		Aboveground production of crops foliage measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_PROD_CH_METHOD		Aboveground production of crops harvest measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_PROD_CT_METHOD		Aboveground production of crops total measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	CR_PROD_METHOD		Coarse root production measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	FR_PROD_METHOD		Fine root production measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed

	Variable Name	Units	Explanation	Reporting protocols
	RT_PROD_METHOD		Total root production measurement method. Descriptive text including technique (e.g., minirhizotron, periodic sampling) and algorithm, and other attributes such as number and area of plots.	Reported once and then only if changed
	NEP_METHOD		Net ecosystem production method. Specific text indicating the net ecosystem production method.	Reported once and then only if changed
	Rs_METHOD		Soil CO2 efflux measurement method. Descriptive text including the methods, instruments (e.g., LI8100) and number of sample locations used to obtain Rs<n>_MEAN.	Reported once and then only if changed
	SAPFLOW_METHOD		Sapflow measurement method. Descriptive text indicating the sap flow method (e.g., Granier, heat pulse), instruments (e.g., Dynamax, homemade), probe length (e.g., 1, 2, 3, or 10 cm length), probe installation (stem diameter at point of probe installation in cm and sapwood thickness in cm) and corrections applied (e.g., according to Clearwater et al. 1999). Identify the tree and shrub species sampled and provide the number of trees or shrubs measured and used to produce the mean for the site.	Reported once and then only if changed
	SPP_O_METHOD		Overstory dominant species measurement methodology. Descriptive text documenting SPP_O<n> measurement methodology.	Reported once and then only if changed
	SPP_U_METHOD		Understory dominant species measurement methodology. Descriptive text documenting SPP_U<n> measurement methodology.	Reported once and then only if changed
	AG_BIOMASS_TF_METHOD		Aboveground biomass of tree foliage measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_BIOMASS_TW_METHOD		Aboveground biomass of tree wood measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_BIOMASS_TT_METHOD		Aboveground biomass of tree total measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_BIOMASS_SF_METHOD		Aboveground biomass of shrub foliage measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_BIOMASS_SW_METHOD		Aboveground biomass of shrub wood measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed

	Variable Name	Units	Explanation	Reporting protocols
	AG_BIOMASS_ST_METHOD		Aboveground biomass of shrub total measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_BIOMASS_NWT_METHOD		Aboveground biomass of non-woody plants measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_BIOMASS_CF_METHOD		Aboveground biomass of crops foliage measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_BIOMASS_CH_METHOD		Aboveground biomass of crops harvest measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	AG_BIOMASS_CT_METHOD		Aboveground biomass of crops total measurement method. Descriptive text including algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	CR_BIOMASS_METHOD		Belowground coarse root biomass measurement method. Descriptive text including coring or allometric method; if allometric, include algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	FR_BIOMASS_METHOD		Belowground fine root biomass measurement method. Descriptive text including coring or allometric method; if allometric, include algorithm and other attributes such as number and area of plots.	Reported once and then only if changed
	RT_BIOMASS_METHOD		Belowground total root biomass measurement method. Descriptive text including coring or allometric method; if allometric, include algorithm and other attributes such as number and area of plots.	Reported once and then only if changed